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## Perceived Cultural Distance and Acculturation among Exchange Students in Russia

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### ABSTRACT

The relations of perceived cultural distance, personality, acculturation orientations and outcomes were studied among exchange students ( $N = 187$ ) in Russia who came from various countries in Asia, sub-Saharan Africa, Latin America and the former Soviet Union. The hypothesis was supported that a larger perceived cultural distance between mainstream and immigrant culture is associated with less psychological (homesickness and stress) and sociocultural (behaviour with Russian students and behaviour with co-nationals) adjustment. The statistical relations between perceived cultural distance, personality and sociocultural adjustment were much stronger for host domain behaviour than for home domain behaviour. Adjustment was higher for participants with more cultural empathy, openmindedness and flexibility. Adjustment showed statistically stronger associations with cultural distance than with acculturation orientations. It is concluded that cultural distance may be more salient than acculturation orientations in studies of heterogeneous groups of immigrants. Copyright © 2008 John Wiley & Sons, Ltd.

**Key words:** perceived cultural distance; acculturation; Russia; exchange students

### INTRODUCTION

There is a steady increase in the number of international students in Russia. The exchange students of our study have come to Russia to undertake a 5-year Master degree. Although these students intend to repatriate after graduation, the period of 5 years is sufficient to experience many acculturation challenges. In a previous study we examined the role of perceived cultural distance in acculturation of another group of exchange students in Russia who came from various countries (Galchenko & Van de Vijver, 2007). A distinction was made between *antecedent variables* (contextual conditions in which acculturation takes place, notably the perceived distance between the ethnic and the Russian culture), *mediating variables* (e.g. preference for adopting the mainstream culture and/or maintaining the culture of the country of origin) and *outcome variables* (the adjustment of the immigrant). A larger

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perceived cultural distance was associated with less adjustment. Moreover, the influence of mediating variables was relatively small compared to perceived cultural distance.

The current study is a replication and extension of the previous one. Participants from other countries were involved in the present study: Latin America, Uzbekistan and Ukraine. A new, more acculturation-related personality instrument was used that has shown its value in acculturative research (Multicultural Personality Questionnaire (MPQ); Van der Zee & Van Oudenhoven, 2001; Van Oudenhoven, Mol, & Van der Zee, 2003). The current sample is assessed in the fifth month after arrival, which is a shorter period than the 2 years used in the previous study. Finally, we examined the role of cultural distance in more detail than done in the previous study by using country-level measures of cultural distance, such as Gross Domestic Product (GDP), alongside perceived cultural distance (only the latter was used in the previous study).

The present study examines perceived cultural distance and personality as antecedent variables, coping and acculturation orientations as the mediating variables and psychological adjustment (depression and homesickness) and sociocultural adjustment (behaviour in home and host domain) as outcome variables. The choice of these variables was based on commonly used acculturation models (e.g. Arends-Tóth & Van de Vijver, 2006a,b) and earlier findings (e.g. Ait Ouarrasse & Van de Vijver, 2004; Babiker, Cox, & Miler, 1980; Berry & Sam, 1997; Galchenko & Van de Vijver, 2007; O'Grady & Lane, 1996; Ward, Leong, & Low, 2004).

#### *Antecedent variables: cultural distance, perceived cultural distance and personality*

Cultural distance can be conceptualized as a country- and an individual-level variable. Examples of the former are differences in GDP, gross income inequality metrics (Gini coefficient) and differences in psychological characteristics, such as attitudes or values (Hofstede's dimensions). The GDP of a country is defined as the market value of all final goods and services produced within a country in a given period of time (International Monetary Fund, 2007). The Gini coefficient is a measure of income inequality in a country (United Nations, 2006). The Hofstede's dimensions are based on the following cultural characteristics: power distance index, individualism, masculinity, uncertainty avoidance index and long-term orientation (Hofstede, 2001). The present study uses GDP, Hofstede's dimensions and the Gini coefficient to test the relation between objective and subjective measures of cultural distance.

The concept of perceived cultural distance was introduced by Babiker et al. (1980) to account for the distress experienced by sojourners during the process of acculturation. These authors developed a cultural distance index which measures an individual difference of the perceived discrepancies between social and physical aspects of home and host culture environments. In a sample of foreign students in Scotland, scores on the index were related to psychological adjustment. Our previous study among Russian exchange students indicated that perceived cultural distance was a stronger predictor of outcomes than were acculturation orientations (Galchenko & Van de Vijver, 2007).

The question can be asked whether perceived cultural distance is an antecedent, mediating or outcome variable. Our previous study found perceived differences to be unidimensional. The current study set out to examine the dimensionality of perceived cultural distance in expatriates to determine the replicability of our earlier findings.

According to Ward's model (Ward, Bochner, & Furnham, 2001), personality-related variables influence adjustment outcomes. The MPQ was used to study of the adjustment of

Western expatriates in Taiwan ROC (Van Oudenhoven et al., 2003). Social initiative was found to be a strong predictor of psychological well-being, while cultural empathy was a predictor of satisfaction with life and the amount of social support in the host country. Flexibility was a strong predictor of job satisfaction and social support. Emotional stability was the most consistent predictor of adjustment.

#### *Mediating variables: coping and acculturation orientations*

In a comparative study of Asian and Anglo-Australian students in Australia, Bailey and Dua (1999) tested the hypothesis that culture influences preferred coping styles and that acculturative stress is attenuated by the use of culturally relevant coping strategies. Asian students reported most stress in their first six months in Australia; they tended to employ collectivist coping strategies (seeking social support) more often than did Anglo-Australian students, who used more individualist coping styles (problem solving). The relation between the four acculturation orientations (separation, assimilation, integration and marginalization) and sojourner adjustment was examined by Ward and Rana-Deuba (1999). Sojourners who adopted an integrated style experienced less psychological distress, whereas sojourners who preferred assimilation reported fewer social problems. Nesdale and Mak (2000), studying acculturation among exchange students in Australia, found that a positive attitude towards the host country was the strongest predictor of host country identification, whereas a strong ethnic involvement was a negative predictor.

#### *Outcomes Variables*

*Psychological adjustment: homesickness and stress.* Poyrazli and Lopez (2007), working in the US, found that international students experienced higher levels of discrimination and homesickness than did US students. Age, English proficiency and perceived discrimination predicted homesickness among the international students. In another research involving students in the Netherlands and the UK both personality and family situation factors were found to influence homesickness (Stroebe, Van Vliet, Hewstone, & Willis, 2002). More homesick students experienced more adjustment problems. Ward and Kennedy (1994), working among a group of Malaysian and Singaporean students, found that the level of depression and stress were significantly higher after one month and after one year of sojourn than after a 6-month period. A high level of psychological distress during the first months of residence was also found in other longitudinal studies (quoted in Ward et al., 2001).

*Sociocultural adjustment: behaviour in home and in host domain.* Ward and Kennedy demonstrated that psychological and sociocultural adjustment are predicted by different variables; social support and both co-national and host-national identification are better predictors of psychological outcomes, while contact variables such as the frequency of (positive) contact with host-nationals and co-nationals are better predictors of sociocultural outcomes (Ward & Kennedy, 1994). It has been suggested that sociocultural outcomes also include contacts with co-nationals (Arends-Tóth & Van de Vijver, 2006a,b). In line with this recommendation, the current study addressed behaviours in both the mainstream and ethnic domains as acculturation outcomes.

### *Hypotheses*

We tested the following hypotheses:

1. Perceived cultural distance is associated with acculturation outcomes; more specifically, a larger distance is associated with less psychological adjustment, more interactions with co-nationals and fewer interactions with host-nationals (the latter two involve sociocultural adjustment).
2. Perceived cultural distance has stronger associations with outcomes than have acculturation orientations.
3. Cultural empathy, emotional stability, openmindedness, social initiative and flexibility are positively associated with interactions with host-nationals, co-nationals and psychological adjustment.
4. Attitudes towards host domain and seeking social support are positively associated with psychological adjustment and interactions with host-nationals.
5. Groups coming from countries that differ more from Russia in terms of values and economical variables show a larger perceived cultural distance.

### **METHOD**

#### *Participants*

The sample comprised of 187 first-year exchange students (77 women and 110 men; mean age = 21.24 years,  $SD = 2.68$ ); there were 21 students from China, 11 from Iran, 22 from Nigeria, 13 from Ethiopia, 11 from a Zambia, 29 from Cuba, 18 from Bolivia, 12 from Paraguay, 19 from Georgia, 14 from Uzbekistan and 17 from Ukraine. They study at different universities in Moscow. The relatively small numbers per country made it necessary to cluster students across countries. The clustering was based on similarities and scores on the psychological variables, notably perceived cultural distance. The five African groups (all Blacks) were taken together in the group-level analyses; the same was done for the students from Latin American countries, from Iran and China (scores of participants from these countries showed remarkable similarities despite the clear cultural differences between the countries) and from countries from the former Soviet Union. Therefore, the following groups were used in the analyses: African, Asian, Latin American and the former Soviet group.

The language of instruction is Russian and classes comprise of both exchange and Russian students. Prior to their actual study, exchange students who do not yet speak Russian have to learn Russian in special intensive summer courses for foreign students in host institutions for three months and they continue to study Russian during the first year of the regular curriculum. Every exchange student lives on campus, either alone or with a roommate.

#### *Instruments*

Unless indicated otherwise, measures were developed by the authors and were adaptations of instruments used in a study on Moroccan immigrants that was carried out in our research group (Ait Ouarasse & Van de Vijver, 2004). Unless specified otherwise, responses were given on a 7-point Likert scale, with answer options ranging from 1 (*strongly disagree*) to

7 (*strongly agree*). Exploratory factor analyses showed that all psychological scales were unifactorial.

The first measure of the questionnaire addressed *Perceived Cultural Distance*. An examples of an items is: 'How similar or different do you find the mentality in Russia and in your home country?' The scale comprised of 16 items and responses were given on a 7-point Likert scale, with answer options ranging from 1 (*very similar*) to 7 (*very different*). The internal consistency of the scale was high (Cronbach's  $\alpha = .92$ ).

Personality was measured by using the MPQ (Van der Zee & Van Oudenhoven, 2001). The MPQ contained 91 items, comprising five scales: cultural empathy (e.g. 'understands other people's feelings') ( $\alpha = .81$ ), openmindedness (e.g. 'is interested in other cultures') ( $\alpha = .86$ ), social initiative (e.g. 'makes contacts easily') ( $\alpha = .84$ ), emotional stability (e.g. 'remains calm in misfortune') ( $\alpha = .85$ ), flexibility (e.g. 'changes easily from one activity to another') ( $\alpha = .77$ ).

Coping skills were measured by means of the coping strategy indicator (Amirkhan, 1990). The scale measures three types of coping strategies: problem solving, seeking social support and avoidance. Participants are asked to describe how they dealt with a problem they encountered in the last six months. This measurement comprises 33 items such as 'brainstormed all possible solutions before deciding what to do?' (problem solving), 'accepted sympathy and understanding from someone?' (seeking social support), 'spent more time than usual alone?' (avoidance). The scale employs a 3-point response scale, with options ranging from 1 (*not at all*) to 3 (*a lot*) ( $\alpha = .71$  for problem solving, .83 for social support and .60 for avoidance).

Acculturation orientations were studied as attitudes in public and private domains, such as food and family (private domains) and social contacts and language (public domains). We used the 2-item measurement method (Arends-Tóth & Van de Vijver, 2004, 2006a,b), which means that questions were asked about relevant acculturation domains for both country of origin and country of settlement. The questionnaire consisted of 24 items measuring attitudes such as 'I like Russian food' and 'I like food of my country' (private domain) and 'I like to have Russian friends' and 'I like to have friends from my country' (public domain) ( $\alpha$  of attitude towards home domain = .70, and of attitude towards host domain = .88).

Psychological outcomes were measured with a homesickness scale of 10 items (e.g. 'I often dream about my future visits to my country') and a stress scale of 7 items (with items such as 'How often do you feel nervous?'). Responses could range from 1 (*never*) to 7 (*most of time*) ( $\alpha$  of homesickness = .89 and of stress = .75).

Behavioural outcomes were examined by measuring self-reported behaviour in public and private domains, such as food and family (private domains) and social contacts and language (public domains). The questionnaire comprised of 16 items, 8 referred to the culture of origin (e.g. 'How often do you ask for help/advice of Russian students?'); another set of 8 items asked the same questions with regard to country of settlement (e.g. 'How often do you ask for help/advice students of your home country?'). The response alternatives ranged from 1 (*never*) to 7 (*daily or almost daily*) ( $\alpha$  of behaviour in home domain = .74 and of Behaviour in host domain = .80).

### Procedure

The first author contacted the administration of universities and the person from the university administration helped to arrange sessions to fill out the questionnaire. Exchange

students were approached. Participation was voluntary; no financial reward was given. The questionnaire was given to groups of students in a classroom after lectures. The average time to complete the questionnaire was 1 hour. The questionnaire was originally developed in English. A Russian version was made using a translation back translation procedure. Russian and English versions were available for the participants. Participants from the former Soviet Union filled in the Russian version and the rest of exchange students chose the English one.

### *Data analysis*

Multivariate analysis of Variance (MANOVA) was used to determine whether the samples showed different scale means. The size of the cross-cultural differences was expressed in terms of proportion of variance accounted for by cultural group in the MANOVA ( $\eta^2$ ). We adopted Cohen's proposal and used .01, .06 and .14 as cut-off values for small, moderate and large effects. Bonferroni-corrected *post hoc* tests were employed to adjust the selected  $\alpha$  level to control for overall Type 1 error rate in determining which cultural groups showed different means. Covariance analysis was used to examine the influence of perceived cultural distance on the cross-cultural differences on all scales (*cf.* Poortinga & Van de Vijver, 1987). Country was the independent variable, perceived cultural distance the covariate and the scale scores were the dependent variables. We compared the size of the cross-cultural differences in the original scores with the size of these differences after correction for perceived cultural distance. Multiple regression analysis was used to evaluate the association of predictors with all outcome variables; stepwise regression analyses were conducted to determine the viability of the mediation model of acculturation. These analyses tested whether the relations between antecedent and outcome variables were partly or fully mediated by the mediating variables (acculturation orientations). Relations between objective (Hofstede's dimensions, GDP and Gini) and subjective measures of cultural distance were examined in a correlation analysis. Finally, regression analyses were conducted to examine the role of perceived cultural distance as antecedent, mediating and outcome variable.

## **RESULTS**

The results are divided into three sections: (1) the examination of group differences in mean scores; (2) testing the relations between perceived cultural distance and personality and outcome variables, psychological and behavioural adjustment; (3) computing correlations between objective and subjective measures of cultural distance and the role of the latter as antecedent, mediating and outcome variable are addressed.

### *Group differences in mean scores*

Cross-cultural differences in means on the scales were examined in a MANOVA with country cluster (4 levels: African, Asian, Latin American and former USSR) and gender (2 levels) as independent variables and all scales as dependent variables. Gender was included as a control variable because the country clusters were not entirely similar in terms of gender composition. Country cluster showed a significant multivariate effect,



Table 1. Standardized mean scores for each country cluster

Scale	African	Asian	Latin American	Former USSR
Perceived cultural distance	0.57 <sub>c,d</sub>	0.86 <sub>c,d</sub>	0.18 <sub>a,b,d</sub>	-1.26 <sub>a,b,c</sub>
Personality				
Cultural empathy	0.17 <sub>b,c,d</sub>	-1.96 <sub>a,c,d</sub>	0.35 <sub>a,b</sub>	0.64 <sub>a,b</sub>
Openmindedness	-0.00 <sub>b,c,d</sub>	-1.90 <sub>a,c,d</sub>	0.42 <sub>a,b</sub>	0.69 <sub>a,b</sub>
Social initiative	0.01 <sub>b,c</sub>	-0.71 <sub>a,c,d</sub>	0.39 <sub>a,b</sub>	0.05 <sub>b,c</sub>
Emotional stability	-0.80 <sub>b,d</sub>	1.40 <sub>a,c</sub>	-0.72 <sub>b,d</sub>	0.73 <sub>a,c</sub>
Flexibility	-0.11 <sub>b,c,d</sub>	-1.80 <sub>a,c,d</sub>	0.45 <sub>a,b</sub>	0.70 <sub>a,b</sub>
Acculturation orientations				
Attitudes towards home domain	0.61 <sub>b,c,d</sub>	0.09 <sub>a,c,d</sub>	-0.57 <sub>a,b,d</sub>	0.29 <sub>a,b,c</sub>
Attitudes towards host domain	0.18 <sub>b,d</sub>	-1.32 <sub>a,c,d</sub>	0.28 <sub>b,d</sub>	0.55 <sub>a,b,c</sub>
Coping				
Problem solving	-1.01 <sub>b,c,d</sub>	1.22 <sub>a,c,d</sub>	.25 <sub>a,b,d</sub>	-0.15 <sub>a,b,c</sub>
Seeking social support	-0.32 <sub>b,c,d</sub>	-1.25 <sub>a,c,d</sub>	0.35 <sub>a,b,d</sub>	0.66 <sub>a,b,c</sub>
Avoidance	1.35 <sub>b,c,d</sub>	-0.63 <sub>a,c</sub>	-0.09 <sub>a,b,d</sub>	-0.71 <sub>a,b,c</sub>
Outcomes				
Behaviour in home domain	-0.19 <sub>c,d</sub>	-0.24 <sub>c,d</sub>	-0.01 <sub>a,b,d</sub>	0.30 <sub>a,b,c</sub>
Behaviour in host domain	-0.58 <sub>c,d</sub>	-0.82 <sub>c,d</sub>	0.10 <sub>a,b,d</sub>	0.95 <sub>a,b,c</sub>
Homesickness	0.42 <sub>b,c,d</sub>	1.18 <sub>a,c,d</sub>	-0.10 <sub>a,b,d</sub>	-0.97 <sub>a,b,c</sub>
Stress	0.38 <sub>b,c,d</sub>	1.51 <sub>a,c,d</sub>	-0.43 <sub>a,b</sub>	-0.79 <sub>a,b</sub>

Note: Subscripts a, b, c and d indicate that in the *post hoc* test (Bonferroni) the cell average differs from the average of the African, Asian, Latin American and former USSR groups, respectively.

Wilks'  $\lambda = .03$ ,  $F(60, 634) = 34.55$ ,  $p < .01$ ,  $\eta^2 = .75$  (the latter number is the partial  $\eta^2$ , which represents the proportion of variance accounted for by groups). Furthermore, the effect of gender was not significant, Wilks'  $\lambda = .91$ ,  $F(15, 162) = 0.98$ , ns,  $\eta^2 = .08$ . The country cluster by gender interaction was not significant either, Wilks'  $\lambda = .73$ ,  $F(60, 634) = 0.85$ , ns,  $\eta^2 = .07$ .

Table 1 presents the mean scores per ethnic group. The means are standardized across the four groups so that the cell values in the Table can be interpreted as deviations ( $z$  scores) from the global mean of zero. A Bonferroni *post hoc* procedure was used to examine group differences (see Table 1). All four groups showed significant differences in perceived cultural distance: the highest scores were obtained by Asian and African participants, followed by Latin American students and the lowest by exchange students from the former USSR. Students from the Asian group showed the lowest scores on cultural empathy, openmindedness, social initiative and flexibility, and the highest scores on emotional stability. Students from the former USSR demonstrated the highest scores on cultural empathy, openmindedness, social initiative and flexibility and also high scores on emotional stability. African and Latin American students occupied an intermediate position on most variables (except for their relatively low scores on emotional stability).

Participants from African group and from the former USSR reported the highest scores on attitudes towards home domain, followed by the Asian group, while students from Latin America showed the lowest scores. The highest scores on attitudes towards host domain were reported by students from the former USSR, participants from Latin America and African countries occupied an intermediate position and students from Asian group obtained the lowest scores. African students preferred avoidance as coping strategy, participants from Asian group chose problem solving and Latin American and students



Table 2. Effect sizes of cross-cultural differences before and after correction for perceived cultural distance ( $\eta^2$  Values)

Scale	Before correction	After correction	Difference
<i>Acculturation conditions</i>			
Perceived cultural distance	0.65		
Cultural empathy	0.82	0.09	0.73
Openmindedness	0.82	0.07	0.75
Social initiative	0.14	0.01	0.13
emotional stability	0.82	0.00	0.82
Flexibility	0.76	0.16	0.60
<i>Acculturation variables</i>			
Attitudes towards home domain	0.21	0.18	0.03
Attitudes towards host domain	0.39	0.26	0.13
Problem solving	0.57	0.08	0.49
Seeking social support	0.49	0.08	0.41
Avoidance	0.68	0.03	0.65
<i>Outcomes</i>			
Stress	0.67	0.00	0.67
Homesickness	0.56	0.01	0.55
Behaviour in home domain	0.04	0.00	0.04
Behaviour in host domain	0.44	0.21	0.23
Average*	0.53	0.08	0.44

\*Average does not include perceived cultural distance.

from the former USSR preferred seeking social support. Asian and to a lesser extent African students reported more stress and homesickness and less behaviour in home and in host domain. Students from the former Soviet Union and from Latin America reported less stress and homesickness and more interactions with other students than did other students.

The patterning of the country means of Table 1 was studied in a multidimensional scaling analysis in which the dimensionality of the country distances based on the psychological scale means was addressed. A one-dimensional solution showed a low stress value of .09. The coordinates of African, Asian, Latin American countries and the former USSR were 0.98, 0.99,  $-0.77$  and  $-1.20$ , respectively. So, all measured variables point to a single underlying dimension, with the group of the former USSR at one extreme, Asian and African group at the other extreme and Latin American countries in the intermediate position.

*The effect of perceived cultural distance.* We conducted a MANOVA to investigate the importance of perceived cultural distance; group was the independent variable and the psychological scale scores were the dependent variables. The size of the cross-cultural differences was computed as the proportion of variance accounted for. We observed only large effect sizes (Table 2). The average effect size is .54, which is very high for cross-cultural studies (Poortinga & Van Hemert, 2001).

As can be seen in the Table, a correction for perceived cultural distance reduced the effect size to .08. This vast reduction points to the relevance of perceived cultural distance in the variables of the study. The largest reductions ( $>.20$ ) were achieved for cultural empathy, openmindedness, emotional stability, flexibility, the three coping styles, stress, homesickness and behaviour in host domain. The crucial role of perceived cultural distance

Table 3. Correlation between outcome measures and perceived cultural distance, acculturation attitudes and coping for the whole group

	Outcome measures			
	Behaviour in home domain	Behaviour in host domain	Homesickness	Stress
Acculturation and coping				
Perceived cultural distance	.21**	-.72**	.60**	.50**
Attitude towards home domain	.07	-.16**	.04	.18**
Attitude towards host domain	-.05	.55**	-.39**	-.42**
Coping	.02	-.14*	.17**	.20**
Problem solving				
Seeking social support	-.18	.57**	-.45**	-.55**
Avoidance	-.08	-.21**	.19**	.13*

\* $p < .05$ ; \*\* $p < .01$ .

in psychological and behavioural adjustment was demonstrated by its power to substantially reduce cross-cultural score differences on outcome variables.

Scale correlations are presented in Table 3. In line with the first hypothesis, perceived cultural distance showed a significant, positive correlation with behaviour in the home domain, homesickness and stress, and a significant, negative correlation with behaviour in the host domain. The second hypothesis stated that outcome measures should show stronger correlations with perceived cultural distance than with acculturation orientations. Differences of these dependent correlations were tested using a procedure described by Dunn and Clark (1969). The differences were in line with the prediction for attitudes in both the home domain and host domain (all  $ps < .05$ ), except for the correlation of .50 between stress and perceived cultural distance and of  $-.42$  between stress and attitudes in the host domain. The difference between the (absolute) correlations was not significant,  $z = 0.65$ , ns. It can be concluded that the second hypothesis was largely confirmed.

### *Predicting acculturation outcomes*

A stepwise multiple regression analysis addressed the relation of antecedent variables (perceived cultural distance and personality), mediating variables (acculturation orientations and coping) and outcomes (the psychological and behavioural adjustment measures) across all groups. Perceived cultural distance and personality (cultural empathy, openmindedness, social initiative, emotional stability and flexibility) were predictors in the first step and acculturation variables (attitudes in home and in host domain) and coping (problem solving, seeking social support and avoidance) were added in the second step.

The first regression analysis examined stress (see Table 4). The antecedent variables showed a significant effect,  $R^2 = .56$ ,  $p < .01$ . Adding the mediating variables significantly increased the value of  $R^2$  by .03. Openmindedness was the only predictor in the first subset, while cultural empathy was also a significant predictor of stress in the second step. The second regression analysis addressed homesickness. Although the first step of analysis had a significant effect ( $R^2 = .52$ ,  $p < .01$ ), there were no significant predictors. The second step increased the value significantly,  $\Delta R^2 = .03$ ,  $p < .01$ . Perceived cultural distance,

Table 4. Results of stepwise regression analyses with psychological adjustment as dependent variables (for whole group)

Predictors	Stress		Homesickness	
	Antecedent <sup>†</sup>	All <sup>†</sup>	Antecedent <sup>†</sup>	All <sup>†</sup>
Antecedent variables				
Perceived cultural distance	.08	-.00	-.15	-.25**
Cultural empathy	-.20	-.21**	-.18	-.23
Openmindedness	-.51**	-.44**	-.34	-.44**
Social initiative	-.02	-.00	-.00	.01
Emotional stability	-.25	-.11	-.26	-.13
Flexibility	-.23	-.16	-.19	-.20
Mediating variables				
Attitude towards home domain		.08		-.06
Attitude towards host domain		.06		-.16**
Problem solving		-.06		-.09
Seeking social support		-.04		.13
Avoidance		.10		.09
R <sup>2</sup>	.56**	.59**	.52**	.54**

\* $p < .05$ ; \*\* $p < .01$ ; <sup>†</sup>The label 'antecedent' refers to the antecedent variables (perceived cultural distance, resources and personality) that were the predictors of the first set. The label 'all' refers to the combination of antecedent variables and mediating variables (coping and acculturation variables) that were the predictors in the second step.

openmindedness and attitudes towards host domain were negative predictors of homesickness. It can be concluded that only cultural empathy and openmindedness tended to be significantly related to psychological outcomes in ways that could be expected. High levels of cultural empathy and openmindedness were associated with less stress and homesickness. Adding acculturation orientations and coping led to a significant, though small increase in the percentage of variance accounted for. Attitudes towards host domain were a significant, negative predictor of homesickness which means that exchange students, who prefer socialize with host nationals, have less homesickness. The analysis of the behaviour in the home domain scale showed a significant effect,  $R^2 = .03$ ,  $p < .01$  (Table 5). The first subset did not reveal any significant predictors so and the second subset. The introduction of mediating variables did not lead to a significant increase in explained variance. The antecedent conditions had a significant influence on behaviour in the host domain,  $R^2 = .53$ ,  $p < .01$ . Adding mediating variables had a significant effect,  $\Delta R^2 = .04$ ,  $p < .05$ . Perceived cultural distance was a negative predictor in both steps. Flexibility was a positive predictor. Attitudes towards host domain and seeking social support were significant mediating variables. These results indicate that exchange students who reported small perceived cultural distance, are flexible, choose seeking social support as coping and prefer participate in Russian celebrations (attitude towards host domain), socialize more with host nationals (behaviour in host domain).

Antecedent variables were found to have more impact on outcomes than mediating variables. Cultural empathy, openmindedness and flexibility were predictors of psychological and behavioural outcomes. Psychological adjustment and host domain behaviour were much better to predict than were home domain behaviours. This difference may be a consequence of the relatively short stay of the students in Russia at the time of the

Table 5. Results of stepwise regression analysis with sociocultural adjustment as dependent variables (for whole group)

Predictor	Behaviour in home domain		Behaviour in host domain	
	Antecedent <sup>†</sup>	All <sup>†</sup>	Antecedent <sup>†</sup>	All <sup>†</sup>
<b>Antecedent variables</b>				
Perceived cultural distance	.05	-.05	-.58**	-.40**
Cultural empathy	-.01	-.00	.00	.00
Openmindedness	.27	.35	-.07	-.15
Social initiative	.03	.03	.00	.00
Emotional stability	.19	.25	.06	.08
Flexibility	-.04	-.05	.26*	.23
<b>Mediating variables</b>				
Attitude towards home domain		.11		.02
Attitude towards host domain		.05		.25**
Problem solving		.17		.05
Seeking social support		.08		.13*
Avoidance		.06		-.07
R <sup>2</sup>	.03*	.03	.53**	.57**

\* $p < .05$ ; \*\* $p < .01$ ; <sup>†</sup>The label 'antecedent' refers to the antecedent variables (perceived cultural distance, resources and personality) that were the predictors of the first set. The label 'all' refers to the combination of antecedent variables and mediating variables (coping and acculturation variables) that were the predictors in the second step.

study (5 months) in which co-nationals still play an essential role in the life of these exchange students and in which few individual differences in dealing with co-nationals can be found. Our data from the previous study suggest that these individual differences emerge later. The results of regression analysis partly supported our hypothesis 4. Attitudes towards host domain and seeking social support positively related to behaviour in host domain (sociocultural adjustment).

#### *Perceived cultural distance as an antecedent, mediating or outcome variable*

In order to test whether perceived cultural distance mediator of outcome, two additional regression analyses were conducted. The first analysis tested perceived cultural distance as a mediator. For this purpose we used a stepwise regression analysis, where personality-related variables were predictors of outcomes in the first step and perceived cultural distance and acculturation orientations and coping were added in the second step. The second step did not show a significant increase of  $R^2$  for stress, homesickness and behaviour in home domain, whereas the increase for behaviour in host domain was significant,  $\Delta R^2 = .10$ ; however, perceived cultural distance was not significant in any analysis (see Table 6).

The second regression analysis examined perceived cultural distance as outcome. Personality scales were used in the first step while acculturation orientations and coping were added in the second step. The  $R^2$  of the second step was .68, which was a significant increase of .10,  $p < .01$ . As outcome variable, perceived cultural distance was negatively predicted by cultural empathy, emotional stability and flexibility in the first subset. The

Table 6. Results of stepwise regression analysis with perceived cultural distance as mediating variables (for whole group)

	Stress		Homesickness		Behaviour in home domain		Behaviour in host domain	
Perceived cultural distance	-.13		.41		.31		-.33	
$R^2$	.56**	.56	.52**	.52	.06**	.06	.43**	.54**

\* $p < .05$ ; \*\* $p < .01$ . The first value of  $R^2$  means the Adjusted  $R$  square for the first subset and the second  $R^2$  is the coefficient after adding perceived cultural distance as mediator variable.

Table 7. Results of stepwise regression analysis with perceived cultural distance as outcome variable (for whole group)

	Perceived cultural distance	
Cultural empathy	-.34**	-.15
Openmindedness	-.17	-.08
Social initiative	.00	.01
Emotional stability	-.66**	-.44**
Flexibility	-.47**	-.27**
Attitude towards home domain		.11**
Attitude towards host domain		-.44**
Problem solving		.04
Seeking social support		-.11**
Avoidance		.07
Stress		-.04
Homesickness		.15**
Behaviour in home domain		.00
Behaviour in host domain		-.21**
$R^2$	.68**	.78**

\* $p < .05$ ; \*\* $p < .01$ .

second subset revealed negative associations with flexibility, attitude towards host domain, seeking social support and behaviour in host domain, emotional stability and positive correlations with attitude towards home domain.

The statistical analyses suggest that perceived cultural distance is not a powerful mediating variable. The question of whether perceived cultural distance is better seen as an antecedent or an outcome of the acculturation process is more difficult to answer on statistical grounds. We found significant relations of perceived cultural distance with personality variables, which suggests that the perception of distance is not the mere reflection of objective cultural distance measures. However, perceived cultural distance is a good predictor of outcomes (see Table 7). Omitting this variable from a regression equation would have reduced the amount of variance explained. This pattern of findings suggests that perceived cultural distance is better seen as antecedent condition than as mediating or outcome variable; yet, it is likely that the variable is also influenced by outcome measures in a feedback loop (with a weaker association in the return loop than in the forward loop).

*Objective and subjective measures of cultural distance.* In order to test hypothesis 5, we calculated the difference between GNP, Gini and Hofstede's coefficients of the country

of origin and Russia and then correlated these differences with perceived cultural distance. Not all countries of this study are presented in the Hofstede database; we used data for the following countries: China, Nigeria, West African countries. Georgia, Ukraine and Uzbekistan were given the same scores as Russia; scores of Paraguay and Bolivia were estimated by taking averages of Uruguay and Colombia. Russia has no scores for long/short term orientation; therefore, only the other four dimensions were analysed. Only one correlation was significant: uncertainty avoidance ( $r = -.77, p < .05$ ). In addition, we did not find significant correlations between the absolute value of the differences of all objective distance measures and perceived cultural distance. It can be concluded that there were virtually no relations between objective and subjective measures of cultural distance.

## DISCUSSION

This study was aimed to examine the role of perceived cultural distance in adjustment of exchange students in Russia. A large perceived cultural distance was associated with less psychological adjustment and more interactions with co-nationals and fewer interactions with host-nationals. Chinese and Iranian students reported large perceived cultural distance, experienced more stress and homesickness and socialized mostly with co-nationals. Students from Georgia, Uzbekistan and Ukraine showed the smallest perceived cultural distance with Russia, less stress and homesickness and more interaction with host-nationals. In our view, perceived cultural distance is essential in understanding the differences. Students from the former USSR can speak Russian fluently, tend to have many Russian friends and share the religion and various traditions with Russians. This small perceived cultural distance helps them to adjust better to the host country.

A larger perceived cultural distance was associated with more homesickness and less behaviour in host domain. We found a weaker association of acculturation variables with outcomes. This finding confirms our hypothesis that perceived cultural distance has stronger relations with outcomes than have acculturation variables. The central role of perceived cultural distance is in line with earlier studies (e.g. Abe & Wiserman, 1983; Galchenko & Van de Vijver, 2007; Ingman, Ollendick, & Akande, 1999; Nesdale & Mak, 2000) in which it was found that perceived cultural distance is an important antecedent variable in sojourner adjustment. The smaller salience of acculturation orientations is probably due to the large cross-cultural variations in the groups we studied. Most acculturation research involves a single group. In homogeneous immigrant groups the influence of orientations will probably be relatively large and the influence of perceived distance will be relatively small.

The results of regression analysis demonstrated that perceived cultural distance predicted psychological (homesickness) and behavioural outcomes (behaviour in host domain). Apparently, perceived cultural distance influences to what extent exchange students miss their home country and how they socialize with Russian students. The antecedent and mediating variables had less influence on behaviour in home domain than on behaviour in host domain; students in all groups often interact with their co-nationals. There are more differences between exchange students in the host domain. For example, students from Latin American countries socialize more with Russian students and Chinese of Iranian students prefer to communicate mostly with co-nationals.

Our results about the role of personality in acculturation largely confirmed other studies (e.g. Van Oudenhoven et al., 2003). More specifically, we found that cultural empathy,

openmindedness and flexibility have relations both psychological and behavioural adjustment. However, contrary to other studies, emotional stability was not associated with better adjustment in our sample. The reason for this seemingly unexpected finding may be the cultural heterogeneity of our sample. Students from the Asian group reported high levels of emotional stability but they also had a high level of homesickness and stress (psychological adjustment) and socialize mostly with co-nationals (sociocultural adjustment). So, the relation between emotional stability and adjustment that is negative at individual level in other studies, may not be negative in a heterogeneous group such as examined in the present study.

The objective (country-level) measures of cultural distance (such as GDP), Gini coefficient and Hofstede's dimensions) were compared with perceived cultural distance scores in groups. Our expectations about the correlations between the difference of objective measurement of cultural distance of the home country and host country and perceived cultural distance were not confirmed. Perceived cultural distance was unifactorial (which confirmed our earlier findings; Galchenko & Van de Vijver, 2007) whereas country-level measures of cultural distance are typically multidimensional (such as Hofstede's model). Furthermore, we also found that perceived cultural distance was related to personality measures; emotionally more stable and more flexible individuals perceive less cultural distance. It can be concluded that perceived cultural distance is not a simple rendering of objective economic differences and that the perception of differences is not well captured by the Hofstede or economic dimensions. Clearly, more research is needed here.

### *Practical implications*

There is a lack of national and international organizations and national communities which could help newcomers in Russia. This study provides insight in the process of acculturation and could help counsellors and ethnic communities to identify factors that are critical for a successful overseas assignment. These findings could be useful for university administrators to ensure adequate service delivery. The results of the current project can also help in the development of orientation and training programmes to facilitate students' academic and cultural adaptation. An appreciation of the importance of cultural distance is vital in the preparation of exchange students to their life in the host country. It is important to provide them with information about the ethnic vitality of the community of co-nationals in the country of settlement. Insight in the main sources of acculturative stress may increase the quality of life of the international students and reduce the risk of failure of overseas study considerably. In addition, it would be useful for exchange students to give them access to any information sources about the host country and to help them to have more contacts with Russian students. For instance, the administration of universities can organize some meetings with Russian students of Russian celebrations. A good organization of the national community (e.g. presence of clubs, schools or other places where the ethnic culture is transmitted and places of worships) can reduce psychological problems of exchanges students and improve the quality of their life abroad; such an organization can also be helpful in making more contacts with Russian citizens. More in-depth analyses of the groups that show the most problems would be required to identify fruitful domains of counselling.



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